Blackwell Companions to Philosophy

A Companion to Ancient Philosophy

Edited by

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First Philosophy in Aristotle

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What is First Philosophy?

The title of Aristotle's *Metaphysics* (*ta meta ta phusika*) literally means "the things after the physical things." This was not Aristotle's own title.[1] In *Metaphysics* A.1 he calls the project *wisdom* (*sophia*) and says it is knowledge of the first causes and principles (982a1–3). Though not his own title, "metaphysics" is in one respect a suitable description of Aristotle's project. His arguments in the *Metaphysics* frequently rely on his physical theory – especially the theory of change, nature, and the four causes, and his treatment of terrestrial and celestial motion.[2] Aristotelian physics (and natural philosophy more generally) is a theoretical science, whose domain is things subject to change, both perishable (sublunary) and imperishable (heavenly). These same objects (together with some others) are also the domain of wisdom, though they are studied from a different perspective, as we shall see. The *Metaphysics* assumes that its audience is versed in Aristotle's natural philosophy. The *Metaphysics* comes *after* the works on natural philosophy in the sense that it uses their findings in developing its own argument. This science comes after physics in the order of learning (Burnyeat, 2001, pp. 111–24).

But in another respect the title "metaphysics" is misleading. Aristotle's *Metaphysics* relies not only on his investigations into natural philosophy but also on his *Organon* (the so-called "logical" works like the *Categories*, *Topics*, and *Analytics*), works primarily devoted to methodology, but which also lay out, at an abstract level, the logical and causal relations between entities. The audience of the *Metaphysics* is expected to be acquainted with these works as well. As we shall see, Aristotle often opens his treatment of topics in the *Metaphysics* with a framework adapted from the logical works. So the

1. Perhaps the title is due to Andronicus of Rhodes (first century BCE) or an earlier Hellenistic editor. On the tradition about the transmission of Aristotle's texts, see Pellegrin, THE ARISTOTELIAN WAY, in this volume. The arrangement of the corpus relies on the Hellenistic division of philosophy into logic, physics, and ethics. Sometimes physics was divided into physics proper and theology. The fact that Aristotle occasionally calls his project "theology" might explain why the *Metaphysics* was grouped with his works on natural philosophy. The title has often been taken to designate the place of the *Metaphysics* in Aristotle's collected works, after the physics. See Ross (1953, p. xxxii, n.2).

2. See Bodnár and Pellegrin, ARISTOTLE'S PHYSICS AND COSMOLOGY, in this volume.

title "metaphysics" is too narrow: the work presupposes knowledge of the *Organon*, as well as physics.

That metaphysics comes after physics in the order of learning should not obscure the fact that Aristotle regards metaphysics as explanatorily *prior* to natural philosophy. On several occasions he distinguishes what is more knowable *to us* from what is more knowable *by nature* or *simply*.[3] Things more knowable to us are, he says, more accessible to perception, whereas things more knowable by nature are further from perception, but *explain* the more familiar things. The correct procedure, he says, is to start an inquiry with things more knowable to us, things to which we have direct perceptual access, and through the study of them to arrive at their causes and principles, which are more knowable by nature. This methodology is advocated in the *Posterior Analytics* and practiced in the natural sciences (start with the observable or agreed facts, proceed to their explanation),[4] but it also appears to hold between physics and metaphysics, for the following reason.

The domain of physics is restricted to things subject to change. But Aristotle gives arguments to show that the continuity of celestial motion and of generation and destruction in the sublunary realm is ultimately caused by movers that are separate from physical things and not themselves subject to change (*Met.* Λ.6–10). Investigation of these unmoved movers – the principles and first causes of motion – falls outside the domain of physics. It is the task of another theoretical discipline, distinct from physics, to study the separate and unchangeable principles on which all changeable things depend – principles Aristotle regards as divine. He calls the discipline *theology* (*Met.* E.1, 1026a18–19). He also calls it First Philosophy (*philosophia prōtē*).[5]

First Philosophy is not restricted to the investigation of divine substance. At the end of *Metaphysics* E.1, Aristotle says that this science will also investigate what is *as* (or *qua*) *being*, both what it is (*ti esti*) and the things that belong to it as being (1026a31–32). *Metaphysics* Γ.1 and the beginning of E.1 say more about this general project (cf. *Met.* K.3, 1061a28–b17). Aristotle carefully distinguishes it from the special sciences. The special sciences mark off some genus of being – for instance, physics studies things subject to change, geometry studies magnitudes, and arithmetic numbers. These disciplines investigate the same objects or overlapping domains of objects but they treat them from different perspectives, ignoring those features not relevant to the discipline. Thus geometry considers objects simply as extended. Physics considers those same objects but insofar as they change. Zoology considers a subset of those objects that are self-movers. First Philosophy investigates the objects of physics and their causes and principles, but it considers them from a highly abstract perspective – simply *as being*.

Some scholars think that Aristotle has two sorts of metaphysical projects, which are distinct, one described in *Metaphysics* Γ, which they call *general* metaphysics or

3. E.g., *APo.* I.2, 71b33–72a5; *Phys.* I.1; *Met.* Z.3, 1029b3–12.

4. See Detel, ARISTOTLE'S LOGIC AND THEORY OF SCIENCE, and for the application in biology, see Lennox, ARISTOTLE'S BIOLOGY, pp. 294–300 in this volume.

5. In addition to references to his project as First Philosophy within the *Metaphysics*, references to it occur in Aristotle's works on natural philosophy: *Phys.* I.9, 192a34–b1; II.2, 194b14–15; *Cael.* I.8, 277b9–12, refer forward to the project. *MA* 6, 700b6–9 refers back to it. *Met.* Z.11, 1037a10–17, refers to physics as second philosophy.

ontology, since it investigates everything that is insofar as it is; the other called *special* metaphysics or *theology*, since it treats the most valuable genus of being, divine substance.[6] On this view Aristotle lays out the general science in *Metaphysics* Γ and pursues it in the central books of the *Metaphysics* (Z, H and possibly Θ). General metaphysics is thought to anticipate special metaphysics, since Z mentions an investigation of separate, immaterial, non-sensible substances, to be undertaken later.[7] Z seems to prepare the way for that more specialized study.

Metaphysics Λ is the obvious place to look for Aristotle's treatment of special metaphysics. Yet scholars have found this text disappointing. First, he spends half the book traveling the same ground explored in ZHΘ. Why include these chapters, if the topic of First Philosophy is divine immaterial substance? Why not rely on the argument in ZHΘ, and move directly to theology in Λ? *Metaphysics* Λ, contrary to expectation, builds up to divine substance from observations about ordinary sensible substances, perishable and imperishable. Indeed, Λ appears to argue for a first unmoved mover, relying on considerations from physics. A second source of disappointment is that Aristotle's theology is expected to investigate what it is to *be* in the primary sense – what it is to be a divine substance. This paradigmatic being is supposed to explain the derivative sorts of being of substantial forms and material substances.[8] Instead, the being of divine substance, though of a rarefied sort (pure actuality or activity), seems not to differ in kind from that of mundane substances.

My view, which I sketch in this chapter, is that Aristotle is committed to a single science of First Philosophy, which is the investigation of being *qua* being.[9] That is the study of all being, and therefore includes divine substance, which is the first cause and principle of being. That first cause is adequately treated in *Metaphysics* Λ, but the bulk of Aristotle's project, which he reworks in Λ.1–5, is carried out in Z, H, and Θ.

The Science of Being *qua* Being

First Philosophy differs structurally from the special sciences. Whereas they mark off a part of being – a genus – and undertake to explain facts about objects that fall within that genus, Aristotle insists (against Plato) that being is *not a genus* (*APo.* II.7, 92b14; *Met.* B.3, 998b22). Being divides immediately into the categories (substance, quantity, quality, and the rest), which are themselves the highest genera (cf. Matthews, 1995). *Metaphysics* Γ.2 articulates the structural relations among beings with a device known as *focal meaning* (*pros hen legomenon*).[10] The idea is that there is a primary sort of being, and that other sorts of beings are determined as what they are in relation to it.

6. Frede (1987), Owens (1978), Patzig (1979). On this issue, see Menn (Forthcoming).

7. Z.2, 1028b30–31; Z.11, 1037a10–13; Z.16, 1040b34–1041a3; Z.17, 1041a7–9.

8. See Frede's Introduction in Frede and Charles (2000, pp. 2, 50). For a critique of the prevailing views on Λ, see Menn (Forthcoming).

9. My perspective on First Philosophy is indebted to the penetrating study by Sefrin-Weis (2002), who reconstructs Aristotle's project of First Philosophy as articulated in *Metaphysics* A, B, Γ, E, and the relevant chapters of K.

10. The label comes from Owen (1960).

Focal meaning must be distinguished from two other notions, which Aristotle defines in the *Categories*: *homonymy* and *synonymy* (*Cat.* 1). Two or more items are *homonymous*, if they share the same name, but the account of why the name applies to them is different. For instance, the rising ground bordering a river and a financial institution are both called a "bank," but for different reasons. Two or more items are *synonymous*, if they share the same name, and the name applies to them for the same reason. For instance, a human being and a horse are called "animal" synonymously, because the name applies to both for the same reason: both are called "animal," because they are living things that can move themselves. If things belong to the same genus, they are synonymous with respect to that genus.

Focal meaning is a special kind of homonymy.[11] One or more items are focally related to a single item, if they share the same name, but neither for the same reason nor merely for a different reason. In giving the reason why the name applies to a secondary item, we must mention the primary item. Aristotle illustrates with the name "medical." A doctor, a patient, an instrument, an instruction, and a practice are all called "medical" with reference to a primary case, medical knowledge. We mention medical knowledge in the account of the others. A doctor is called "medical" because she *possesses* medical knowledge, a patient because he is a *recipient* of medical knowledge, and an instrument because it is *used in the application of* medical knowledge (Γ.2, 1003a34–b4). We must therefore first understand what medical knowledge is, if we are to understand the things that are focally related to it. Still – and this is the important and controversial point – we cannot simply derive the others from an analysis of the focal term. The focus determines *part* of what the secondary item is. Full understanding requires that we uncover what else that entity is and how it is related to the primary term.

Aristotle claims that "being," like "medical," is said in many ways, but not merely homonymously. Instead, entities are said to "be" with reference to a primary case, the being of *substance*.[12] Some things are beings because they are *affections* of substance,

11. This claim is controversial, since many scholars think that focal meaning is, ultimately, a kind of synonymy. I am persuaded by the arguments of Sefrin-Weis (2002), who challenges the widely accepted view of Owen (1960, 1965) and more recent views, including Bolton (1994, 1996) and Code (1996, 1997). For an earlier critique of Owen along similar lines, see Berti (1971), who focused on the evidence from the *Eudemian Ethics*.

12. "Substance" is the traditional translation of *ousia* in Aristotle. The Greek word is an abstract noun derived from the feminine participle (*ousa*) of the verb "to be" (*einai*). The translation of *ousia* as "substance" is misleading, because the noun "substance" derives from the Latin verb "to stand under," which captures only one function of an Aristotelian *ousia*, being an underlying *subject* (Greek: *hupokeimenon*). More serious is the loss of the etymological connection with *being* and the clouding of the connection with Plato, who used the word *ousia* for the entities he regarded as most real: Forms. Some scholars prefer the translation "substantial being," but this is cumbersome. I will therefore retain the traditional "substance," but readers should keep in mind the association with being. On the word's etymology, see Collinge (1971). István Bodnár, to whom I owe the reference, has suggested to me that Collinge's derivation of *gerousia* ("council of elders") could in principle be transferred to *ousia*. The fundamental issue is how old or new the etymological development is, and we unfortunately lack data on this.

some because they *lead to* substance or because they are *destructions, privations, qualities* or *productions* of substance (1003a33–b10). Although being resembles medical in that secondary items are understood via the primary item, being differs from medical in that things investigated simply as *beings* are considered apart from any specific content. We study the secondary beings by investigating the nature of their dependence on the primary entity. First Philosophy inquires into the *causal structure* of reality (cf. Sefrin-Weis, 2002, chs. 9 and 10).

Categories and Change

A schematic and partial framework of Aristotle's ontology is laid out in the *Categories*. There Aristotle argues that things like a particular man and a particular horse are primary substances. They are the ultimate *subjects* on which everything else depends for its existence. Non-substantial properties (such as quantities and qualities), which characterize substances, and substantial species and genera, which identify them specifically and more generally, all depend on the primary objects for their existence. Remove the primary substances – the basic subjects – and everything else is removed as well (*Cat.* 5, 2a34–b6). The *Categories* treats its primary objects as atomic entities and does not analyze them further.[13]

In the *Physics* Aristotle tackles the problem of change and analyzes substances into matter and form. Parmenides had denied the possibility of change, arguing that change would involve the emergence of something out of nothing. Aristotle agreed with his predecessor that there is no absolute becoming. His task was to account for change without admitting the emergence of something from nothing. In *Physics* I.7 Aristotle argues that every change involves three principles: a pair of opposites – a form ϕ and privation $\sim\phi$[14] – and an underlying subject x. A change brings something new into the world: ϕ replaces $\sim\phi$. But the change is not a mere replacement, with the pre-existing entity perishing into nothing and the product emerging out of nothing, because part of the product was there all along – the subject x, which was characterized first as $\sim\phi$ and then as ϕ. In non-substantial changes (changes of quality, quantity, or place) the continuant is a *Categories*-type primary substance, such as a particular man or a particular horse, and the form and privation are pairs of terms, which are properly opposed, in one of the categories of quality, quantity, or place. The relation between a non-substantial property or privation and the underlying subject is *accidental*, because the subject remains what it is in its own right when one of the pair of opposites replaces the other. Socrates remains a man when he becomes dark from pale or musical from unmusical. I will speak of the relation between a predicate and a subject in such cases as *categorial predication*. Below we shall examine the more subtle varieties of predication Aristotle sets out in the *Posterior Analytics*.

Aristotle claims that substantial generation can also be analyzed in terms of three principles. In this case a substance is the *product* of the change and so cannot be what persists through it. *Matter* is introduced as the persisting subject, and *form* is the positive

13. For a different view about the *Categories*, see Devereux (1992).

14. The designation "$\sim\phi$" applies to any state on a range that leads to ϕ.

member of a pair of opposites. A new substance (e.g., a statue) comes to be when matter (e.g., bronze) acquires a form (a shape) it originally lacked. Items in the first category are analyzed in the *Physics* into matter and form to account for their substantial generation, and the relation between them appears to be analogous to that between a non-substantial property and a *Categories*-type primary substance. Thus Aristotle appears to extend categorial predication to the relation between form and matter. The *Metaphysics* agrees with the *Physics* in treating items in the first category as *composites* of a subject (matter) and a predicate (form), often called *hylomorphic* complexes.

What Being is Primary?

Once *Categories*-type primary substances are analyzed into matter and form, their primacy becomes questionable: Is the composite primary? A hylomorphic complex can be analyzed into matter and form, and so is presumably posterior to them. Is one of its components primary? Given the emphasis on subjecthood in the *Categories*, matter claims priority, since form is predicated of it. In *Metaphysics* Z.3 Aristotle lays out an argument that matter alone is substance on the subject-criterion, but he rejects the conclusion, pointing out that there are further criteria for substance, which matter fails to satisfy. So the form and the composite seem to have a better claim than matter to be substance (1029a26–30). Many scholars think that *Metaphysics* Z awards primacy to form, the component that determines what a composite is.

I disagree with this widespread assessment of Z. I will argue that Z presents objections to each of its candidates for substance: matter (Z.3), the composite (Z.4–11), and form (Z.13–16). The strategy of Z is to show that we can save none of them, if we think of matter and form on the categorial scheme of predication. Form cannot be predicated of matter in the way that a non-substantial property is predicated of a *Categories*-type primary substance (e.g., as whiteness is predicated of Socrates). I will argue that no solution to the problem of primacy is forthcoming as long as the categorial scheme of predication is applied to substance. To salvage substantial being, *Metaphysics* H and Θ re-conceive of matter and form on a different model: *potentiality* and *actuality*.

Aristotle prepares the way for this reassessment in E.2 (cf. *Met.* Δ.7). He says that *being* has a variety of meanings: (1) accidental; (2) truth; (3) the scheme of the categories; and (4) potentiality and actuality (1026a33–b2). *Metaphysics* E itself treats accidental being and being as truth, and concludes that neither serves the present purpose (E.4, 1027b33–1028a6). That leaves (3), categorial being, and (4), potential and actual being. Aristotle's task is to investigate the causes and principles of being itself *qua* being (E.4, 1028a3–4), and he does so first in terms of categorial being. I argue that this approach fails for substantial being. He then appeals to potential and actual being, a scheme that proves more successful.[15] I will outline the strategy in ZHΘ and then turn finally and very briefly to the theology in *Metaphysics* Λ.

15. Other scholars argue that the investigation of categorial being and the investigation of potentiality and actuality are two distinct investigations with different goals. See Witt (2003) and Yu (1997).

Overview of *Metaphysics* Z

Z opens with two introductory chapters. Z.1 argues that the study of being must in the first place be a study of substance, since other sorts of beings (qualities, quantities, and so on) depend for their existence and for what they are on substances. To understand those other entities, then, we must understand substance first. ZHΘ focus mainly on that first task.

Z.2 lists examples of substance, including things people widely agree on: animals and plants and their parts, the four elements – earth, water, air, and fire – and the heavenly bodies. Other examples are proposed by particular individuals or schools, such as Platonic Forms, numbers, and the limits of bodies. Part of the task, says Aristotle, is to determine which items belong on the list and which not, and whether there is (or are) some other substance(s) apart from the perceptible ones. But first, in order to evaluate the claims, he needs to address a different sort of question: What is substance? What is it about those entities that makes them seem to be substances?

Z.3 states that "substance" (*ousia*) is understood in a variety of ways, but especially four: (1) essence, (2) universal, (3) genus, and (4) underlying subject. These are criteria one might reasonably think a primary substance should satisfy.[16] Some of them (universal, genus) will be rejected; others (essence, subject) will be kept and clarified. *Metaphysics* Z is structured loosely around this list. Z.3 examines the claim that being an underlying *subject* makes something a substance. Z.4–12 spell out what an *essence* is and argue that a primary thing and its essence are identical. Z.13–16 examine and reject the claim that a *universal* is substance. The *genus* receives no separate treatment but appears to be rejected together with the universal.[17] Z.17 starts anew and considers substance as a principle and cause that explains why matter constitutes a composite.

Subject

Aristotle defines a *subject* in Z.3 as that of which other things are predicated but not itself predicated of anything else (1028b36–37). Take a statue. Three items have a claim to be a subject: the matter (bronze), the form (the shape of the statue), and the composite of both (the bronze statue) (1029a2–5). Aristotle then complains that his definition is unclear, and that in consequence matter alone turns out to be substance (1029a9–10). The bulk of the chapter demonstrates why this is so, and introduces further constraints on substance to avoid that outcome.

16. A number of scholars contend that this fourfold list specifies what might count as the *substance of* a substance – what component of, say, Socrates counts as his substance? I disagree. When Aristotle says that the essence, etc., seem to be the substance of each thing (*ousia . . . hekastou*), he is asking for the *reason why* the examples in Z.2 are regarded as substances. For a helpful discussion of this issue, see Devereux (2003, pp. 161–6).

17. In his summary of Z in H.1, Aristotle mentions the genus together with the universal (1042a13–16) and says that neither is a substance (1042a21–22).

The main argument in Z.3 is puzzling, if one brings to Z the insights of Aristotle's physics and reflects on his example: the bronze statue. One expects Aristotle to ask about the bronze statue: what counts as the underlying subject? The statue? No, the statue is a shape predicated of bronze. The bronze should trump the others as the underlying subject. But is the bronze the *primary* underlying subject? The bronze is a compound of more basic material ingredients, copper and tin, combined in a certain ratio. And those metals are themselves compounds of the Aristotelian elements water and earth. Are water and earth primary? Scholars since antiquity have reasoned that, since Aristotle thinks that earth, water, air, and fire can be transformed into one another, there must be a yet more ultimate subject that survives their transformations, an entity traditionally known as *prime matter* – something that is nothing in its own right but underlies all material bodies in the sublunary realm.[18]

In Z.3 Aristotle strips off properties to arrive at matter, but not through repeated hylomorphic analysis. Instead he first removes the qualities, then the quantities (length, breadth, and depth), and says we see nothing left, unless there is something determined by these. And so, he says, matter must appear to be the only substance (1029a11–19). He then defines matter as something that has no categorial being in its own right (*kath' hauto*): It is neither something, nor so much, nor anything else by which *being* is determined (1029a20–21). "For," he says, "there is something of which each of these is predicated, whose *being* (*to einai*) is *different* from that of each of the predicates" (1029a21–23). This subject is nothing in its own right: all categorial properties (including their negations) belong to it *accidentally* (1029a24–26).

Contrary to expectation, matter is reached as it were directly, as soon as all categorial predicates (including substantial predicates) have been removed. This is not prime matter – something reached by stripping off layers and layers of form. Some scholars have thought that Z.3 presents Aristotle's *concept* of matter, of which bronze is an example.[19] But bronze is not a good example of the matter advertised in Z.3. To be sure, the shape of a statue is accidental to the bronze (since the bronze can survive its removal), but the bronze is something in its own right: bronze. Bronze cannot cease to be bronze and still be what it is.

The passage is less peculiar, if we recognize, first, that Aristotle is relying on categorial predication, and second, that he is reflecting on the subject-predicate model from a highly abstract perspective – simply in terms of *being*, the perspective of First Philosophy. His claim is that his initial definition of a subject leads to a curious result. When all categorial being is removed, there *is something* whose *being is different* from all categorial being: a bare subject. A bare subject cannot be substance, he objects, because substance must be *separate* and a *this* (*tode ti*). So the form and the composite have a better claim than matter to be substance (1029a27–30).

18. Aristotle's commitment to prime matter has been disputed since the mid-twentieth century. See, e.g., Charlton (1970), Furth (1988), Gill (1989), and King (1956). Versions of the traditional interpretation have been defended by, e.g., Happ (1971) and Robinson (1974). See S. Cohen (1984, and 1996, ch. 3), for the attractive suggestion (which I also reject) that prime matter has some essential properties, such as extension. Cf. Sorabji (1988, ch. 1).

19. E.g., Dancy (1978), Frede and Patzig (1988).

Z.3 does not elaborate on separation and *thisness*.[20] In Z.1 Aristotle said that non-substantial properties are *not separate* from substance but depend on a definite subject of which they are predicated (1028a22–29). Substance alone is separate (1028a34–35). These claims suggest that things fail to be separate if they depend for their existence on some definite subject to which they belong. Something is separate if it is a definite subject of which properties are predicated, but does not depend for its existence on any of them. If this is what Aristotle means by separation, why is matter in Z.3 not separate? Matter is a subject to which properties belong, and it does not depend for its existence on any of them. More likely matter fails because it is not a *definite* subject. The being of matter, though *distinct* from all categorial being, is nothing definite, since it has no categorial being in its own right. Apparently, for a subject to be substance, it must be something definite.

Z.1 also mentions *thisness*. Aristotle said that being is said in many ways. In the first place it signifies what something is (*ti esti*) and a *this* (*tode ti*), and then the other categories (1028a10–13). *Thisness* is a distinguishing feature of substance. Scholars often take *thisness* to indicate particularity. Although Aristotle's use of the phrase in the *Categories* supports this claim (*Cat.* 5, 3b10–18), its application is probably not so restricted. Reflection on the phrase itself suggests another relevant factor. The phrase can be literally translated in two ways: "some this" or "this something." In either case one term presumably indicates a kind, and the other something that falls under that kind. The item marked off could be either a particular that falls under a kind (some horse, this horse) or a determination of a wider kind (a sort of horse, this sort of horse). That *thisness* does not simply mean "particular" seems assured, since matter in Z.3 fails the test.[21] A bare subject is surely a *particular*. Matter's lack of *thisness* is rooted in a different fault. As literal translations of *tode ti* suggest, something counts as a *this* only if it is something determinate or particular that falls under a kind. Matter in Z.3 may be a particular, but it does not fall under a kind, since it has no categorial being, and *a fortiori* no substantial being, in its own right.

In fact Aristotelian matter is not a bare subject. Bronze, and any other instance of matter, has some categorial being in its own right. That is why Aristotle regularly refers to matter as one way to be substance.[22] Z.3 demonstrates that if matter is conceived as a *bare* subject it cannot be substance, even though its being is independent of all categorial being. Later we shall see that, according to Z, any sort of matter that constitutes a composite is distinct in being from it. This fact will cause serious

20. On separation, see the debate between Fine and Morrison, esp. Fine (1984) and Morrison (1985). See also the recent assessment in Reeve (2000, §1.1). On *thisness*, see Frede and Patzig (1988, vol. 2, p. 15), and Gill (1989, pp. 31–4).

21. Note, too, that form passes the test. If *tode ti* means particular, Aristotle's designation of form as *tode ti* decides the question whether form is a particular or a universal. I doubt that the status of form can be decided simply on that ground, because, as we have noted, *tode ti* can be construed as something determinate (e.g., Arabian) that falls under a kind (horse). On that construal a *tode ti* is a lowest kind, something that cannot be further differentiated. Nothing prevents an entity of that sort occurring in more than one subject.

22. Even after rejecting the bare subject as substance in Z.3, Aristotle speaks of matter as one of three ways to be substance (1029a30–33); cf. Z.10, 1035a1–2; H.1, 1042a32–b3.

mischief – indeed it will prevent both the composite and the form from being primary substance.

Essence

Z.4 turns to the next topic on the agenda: *essence*. Aristotle says he will first speak "logically" (*logikōs*) about it. He then gives a curious argument. What is the essence of *you*? The essence of each thing, he says, is what it is said to be *kath' hauto* ("in virtue of itself"). To be you is not to be musical, since you are not musical in virtue of yourself. What you are in virtue of yourself is your essence. But your essence is not everything you are in virtue of yourself. It is not what something is *kath' hauto* in the way that white is to surface. Nor is the essence from both: being a white surface. The account of the essence of each thing must specify the thing without mentioning it. So, for example, if being a white surface is being a smooth surface, then the being for white is the same as the being for smooth (1029b13–22).

Why, having started out using *you* as his example, does Aristotle switch halfway through the argument to talk about a white surface? We know from later in Z that he thinks your essence is your *form* – your soul (Z.7, 1032b1–2 with Z.11, 1035b14–16). Why does he not appeal to matter and form here? He could have argued: Your accidental properties (like musicality) are not your essence. Your matter is not your essence. The combination of your form and your matter is not your essence. Your essence is your form. The argument from exclusion would have been clear. But that is not Aristotle's procedure. Instead of mentioning matter and form, he tries to make his point with some obscure remarks about a white surface. Why does he do this?

Some scholars argue that Z operates at two distinct levels of discourse.[23] Call this *the two-levels hypothesis*. Aristotle said at the outset that he would first speak "logically" about essence. One level has been dubbed "logical." A striking feature of the envisaged logical sections is that Aristotle restricts his terminology to vocabulary from the *Organon* – "substance" (*ousia*), "essence," "definition," "subject" and "predicate," "genus" and "species" (*eidos* in its *Organon* sense), "universal" and "particular," and the categories (Burnyeat, 2001, p. 8). These sections do not mention matter and form, which notoriously also go unmentioned in the *Organon*. Matter and form are conspicuously absent from the whole of Z.4–6. Those sections of Z that do appeal to matter and form have been labeled "metaphysical."

What difference in aim is supposed to distinguish the logical and metaphysical levels? The most plausible suggestion is that the logical level develops the *structure* for a metaphysical theory, whereas the metaphysical level fills in that structure by defending a particular metaphysical theory. The distinction is thus between *form* and *content*. On this view our passage at the beginning of Z.4 ignores matter and form, because Aristotle is working out, at a formal level, what an essence is, without privileging

23. Burnyeat (2001), Code (1997, esp. pp. 6–8), Loux (1991, esp. ch. 3 and the summary, pp. 109–11).

his own metaphysical theory in advance. The account is supposed to be rich enough to capture alternatives (e.g., Plato's theory as well as his own) and neutral among competitors.

Our passage evidently does rely on the *Organon* and is in that sense "logical." In particular, Aristotle uses a distinction between two sorts of *kath' hauto* predicates and accidental predicates from *Posterior Analytics* I.4. There he says that Y belongs to X *kath' hauto* in one way, if Y is predicated of X, and Y must be mentioned in the account of what X is (call Y an *essential* predicate of X, since Y must belong to X if X is to be what it is). For instance, *animal* is an essential predicate of Callias, because animal is predicated of Callias and must be mentioned in the account of what Callias is (73a34–37; cf. *Met.* Δ.18, 1022a25–29). Y belongs to X *kath' hauto* in a second way, if Y is predicated of X, and X must be mentioned in the account of what Y is (call Y a *special* predicate of X: the account of Y – the predicate – must mention the kind of thing of which it is predicated) (73a37–b3). For instance, *odd* is a special predicate of *number*, because odd is predicated of number, and number must be mentioned in the account of what odd is. *Snubness* is a special predicate of *nose*, because snubness is predicated of the nose, and the nose must be mentioned in the account of what snubness is. Snubness, Aristotle tells us in Z.5, is *concavity in a nose* (concavity in the legs is something else: bowleggedness). Y is an *accidental* predicate of X, if Y is predicated of X, but neither term is mentioned in the account of the other. Aristotle's favorite example of an accidental predicate is *white* predicated of *man*. What I have so far been calling "categorial predication," applicable in Aristotle's theory of change, corresponds to what the *Posterior Analytics* calls accidental predication.

Our passage in Z.4 can be clarified by means of the *Posterior Analytics* distinctions. First Aristotle excludes your accidents (like being musical) from your essence. Then he says that your essence is what you are *kath' hauto*, but not everything you are *kath' hauto*. Your essence is not what you are *kath' hauto* in the way that *white* is to *surface*. White is predicated of surface, and surface must be mentioned in the account of what white is. Aristotle thinks that whiteness (and other colors) can occur only in surfaces and that the definition of whiteness must specify that primary recipient (*Met.* Δ.18, 1022a29–32, with Z.5, 1030b23–28). There is something to which *you* belong as a special predicate, in the way that white belongs to surface, which must similarly be mentioned in the account of what you are. What you are *specially* contributes to your *being*, but is not part of your *essence*.

The distinction between *being* and *essence* is important. The *being* of an entity is everything the entity is *kath' hauto* – both essentially and specially. The *essence* of an entity is simply what it is essentially, *kath' hauto* in the first way. Our passage in Z.4 mentions neither matter nor form, but your *essence* turns out to be your form and not your matter.

The two-levels hypothesis explains why Aristotle ignores matter and form in parts of *Metaphysics* Z, but I think it misconstrues his project. Aristotle has a reason to ignore matter and form in certain parts of his argument, because the subject-matter of First Philosophy is *being*. You and a bronze statue are substances – beings in the first category. Matter and form are relevant to the analysis of these. But other sorts of entities besides substances are included in the domain of First Philosophy. First Philosophy studies entities in the non-substance categories (qualities, quantities, etc.)

and it studies categorial compounds, like *white man*. Aristotle avoids mentioning matter and form when he speaks generally about the whole domain of his science.

That Aristotle is interested in all beings, and not merely those in the first category, becomes evident from his remarks that directly follow our passage in Z.4:

> Since there are also compounds (*suntheta*) corresponding to the other categories (for *there is some subject for each of them*, e.g., for quality and quantity and when and where and motion), we must consider whether there is an account of the essence for each of them. (1029b22–26)

You served as an example to introduce the question about the essence of compounds in all the categories, including accidental compounds like *white man*, whose components are a non-substantial property and a substance, not form and matter. Aristotle's discourse is abstract, but he is not presenting the formal framework for a metaphysical theory to be filled in later with his own theory of substance. He is working out a theory of *being* and is asking what counts as being in the primary sense and why. The whole discussion in Z (indeed in the *Metaphysics* as a whole) takes place at a single level, the level of *being*, and Aristotle aims at impartiality between *sorts of beings*. Matter and form are introduced when he focuses particularly on items in the first category (to which he will turn in Z.7). But items in the first category are part of a larger field, which includes items in non-substance categories (like *white*) and categorial compounds, like *white man* as well.[24]

Aristotle's task in Z.4–6 is to show what an entity must be like to count as a primary being. He argues in Z.4 that if an entity E is something primary, it is not analyzed as Y predicated of X, where X differs in being from Y (1030a2–11). Anything that can be so analyzed fails to be primary, because it must be explained in terms of its more basic components. Accidental compounds like *white man* are not primary, since the account of *white man* mentions two things, *white* and *man*, which are defined independently of each other. *Snubness* is not primary. Snubness is not itself a compound (it is a quality), but it is analyzed as Y in X, concavity in a nose (Z.5).

In Z.6 Aristotle argues that something succeeds as primary, if it and its essence are one and the same (1032a4–6). As I understand the Z.6 criterion, the essence of a primary thing is *predicated* of that thing and *exhausts* what the subject is: the essence and the being of the subject are identical.[25] There is nothing else that the subject is *specially*, which contributes to its being and must therefore be mentioned in its defining account. In the case of primary things, *being* and *essence* coincide. Only those entities whose being is exhausted by their essence are primary, because they are explained

24. See esp. Aristotle's summary at the end of Z.4, 1030b11–13.

25. In Z.6 Aristotle uses Platonic Forms as candidates for primary things. In the Platonic context the Z.6 criterion is called Self-Predication: The Form F is F (Justice is just, Largeness is large). In my view, the Z.6 criterion and Platonic Self-Predication both involve genuine predication. Many scholars read the Z.6 Thesis as an identity claim, without insisting that predication is also involved. See Code (1985, 1986) and Lewis (2003). Some scholars argue that the Z.6 criterion is something weaker than identity: M. Cohen (1978), Dahl (2003), Spellman (1995). My view shares much in common with Matthews (2003).

through themselves, not through anything more basic. Most entities fail to be primary, because their *being* and *essence* are distinct. Those entities must be defined with reference to their more basic components – both what they are *essentially* and what they are *specially*.

The Problem of Matter

Many scholars think that Z.7–9 are latecomers to *Metaphysics* Z, which intrude on the main argument. I do not share this view. Z.7–9 strike readers as intrusive, because they treat *becoming*, a topic that seems more appropriate to physics than to First Philosophy.[26] But in fact Aristotle has a good reason to include Z.7–9. Substantial generation, though proper to physics, is also vital to Aristotle's developing argument in Z. It reveals that matter precludes the primacy of material composites.

How does matter jeopardize composites? Aristotle claimed in Z.3 that even a bare subject differs in *being* from its predicates. Ordinary Aristotelian matter, like bronze, is something in its own right (bronze is bronze). He will argue that, whatever the matter is, it differs in being from the composite it constitutes. Recall that in the *Physics* Aristotle claimed that all changes are analyzed by means of three principles – a pair of opposites and an underlying subject. The subject survives the change and is characterized first by one opposite and then by the other. In substantial generations the continuant is matter. Matter pre-exists the change, constitutes the product, and persists when the product is destroyed. Reflection on matter in substantial generation reveals that composites in the first category resemble the accidental compound *white man*. This is because the matter that persists through generation and the composite it constitutes have *different persistence conditions*. The bronze that constitutes a statue exists before the statue was made and can survive when the form of the statue has been removed. Even if we focus on matter and form *qua being*, and disregard their specific content, the fact that matter outlasts the composite shows that it makes a *distinct* contribution to what the composite is: Matter contributes to the composite's *being*.

For this reason matter must be mentioned in the account of what a composite is. Aristotle asks in Z.7:

> Is matter among the things [mentioned] in the account? We say what brazen spheres are in both ways, mentioning the matter, that it is bronze, and the form, that it is such and such shape, and this is the genus into which [a brazen sphere] is first placed. So a brazen sphere has matter in its account. (1033a1–5)

In Z.8 he extends this conclusion to living organisms and their species and genera (1033b24–26). He repeats the point about species in Z.10. A species like *man* or *horse* is a universal composite composed of form and matter taken universally (1035b27–30).[27]

26. But see Buchheim (2001, pp. 220–7), who argues that becoming is crucial for Aristotle's metaphysical project. See also Ferejohn (2003).

27. Aristotle uses the word *eidos* for both species (e.g., *man*) and substantial form (e.g., human soul). Driscoll (1981) brought clarity to the whole issue and showed why it is important to keep the two notions distinct.

The analysis of substantial generation demonstrates that *Categories*-type primary substances, such as a particular man and a particular horse, plus their species and genera – man, horse, animal – fail to be primary in Z's sense. The aim of Z.7–9 is to show this, and also to argue that form is not generated (Z.8, 1033a28–b19). The argument that form is not generated (and so does not contain matter) is one step in Aristotle's larger argument to prove that form need not be defined with reference to matter, an argument he completes in Z.11 (1036a26–b7). Form is not like *snubness*: it need not be defined with reference to its primary recipient. Composites, however, are analyzed as Y predicated of X (*this in that*), and X is distinct in being from Y (1036b21–32). Whereas soul is the same as the essence of soul, and so satisfies the Z.6 criterion, man is not the same as the essence of man (Z.11, 1037a33–b7; cf. H.3, 1043b2–4). So composites in the first category are not primary but must be explained in terms of their more basic components. Aristotle concludes his treatment of essence in Z.11 by denying primacy to composites. The award goes to form, whose being is exhausted by its essence.

The Status of Form

Many scholars take the conclusion of Z.11 to be Aristotle's final conclusion in Z: primary substance is form. Although that is Aristotle's verdict in the section on essence, the status of form comes into question in the third section, whose official target is the (Platonist) claim that substance is a *universal*. In Z.13 Aristotle argues that no universal is a substance, a conclusion he repeats at the end of Z.16 (1041a3–5).

The main problem for form is *subjecthood*. Aristotle claimed in Z.3 and repeats in Z.13 (1038b15–16) that substance is a basic *subject*, something of which other things are predicated but not itself predicated of anything else. Form is predicated of matter, which is one sort of subject (1038b5–6). Aristotle claimed in Z.3 and demonstrated in his treatment of generation in Z.7–9 that matter is distinct in being from the composite it constitutes, and so distinct in being from the form of that composite. We have seen that matter deprives the composite of substantiality on the essence criterion, because the composite is analyzed as *this in that*. Like the accidental compound *white man*, the being of a composite is determined in two ways – by its constituent form and matter. Form satisfies the essence criterion: its being is exhausted by its essence. But matter deprives form of substantiality in a different way, because form is predicated of it. Form fails to satisfy the subject criterion. Substantial form can be defined through itself, but it depends for its existence on matter of which it is predicated.

This is not the occasion for a detailed analysis of Z.13 (for my analysis, see Gill, 2001). Z.13 is a pivotal chapter for scholars who share the view that Aristotle concludes in Z that primary substance is form. For some this chapter proves that Aristotelian forms are not universals but particulars.[28] Others reconstruct the chapter to show that form, though it is a universal, escapes the objections brought against universals

28. E.g., Frede and Patzig (1988, vol. 1, pp. 36–57; vol. 2, pp. 241–63), Irwin (1988, sec. 140), Spellman (1995), and Witt (1989, pp. 155–62).

in this chapter.[29] I think Aristotle's objections to the universal are devastating for form, whether form is a universal or a particular. Form is excluded as primary by the categorial scheme of predication, according to which it is predicated accidentally of matter. The problem is the same whether form is predicated of one bit of matter or many. On my interpretation, Z.13–16 show that even form cannot be substance.

If I am right, Z reaches a dead end in Z.16: None of the candidates for substance is primary. Not the matter. Not the composite. Not the form. The impasse is created by the categorial scheme of predication, which Aristotle extends to substantial being. He needs a different approach. Z.17 makes a fresh start, and Aristotle pursues the thread in H.1–5, using the concepts of potentiality and actuality.

Potentiality and Actuality

First Aristotle maps his concepts of potentiality and actuality onto his categorial scheme of predication. This strategy is useless in salvaging anything as primary substance, but let us follow his lead. Recall the model of change in the *Physics*. Aristotle analyzed change by means of three principles – a pair of terms properly opposed (ϕ and $\sim\phi$), and an underlying subject x, which is first in the privative state, then in the positive state. All terms and their combinations can be tagged as actualities – the goal (ϕ), the product (ϕx), the privation ($\sim\phi$), the pre-existing subject ($\sim\phi x$), and the persisting subject (x).[30] In addition, the change x undergoes from $\sim\phi$ to ϕ is labeled an actuality – an incomplete one. Change is an incomplete actuality, because it is directed toward a goal (ϕ) beyond itself. The goal terminates and completes the change.[31]

A potentiality is defined with reference to the actuality for which it is the potentiality. The potentiality for health differs from the potentiality for music. A potentiality for ϕ applies to a subject x, only if x is suited to be in the positive state: x must be the right kind of subject to be ϕ. Not all subjects are potentially healthy (living organisms are; inorganic materials are not). Any subject that is potentially ϕ is also potentially $\sim\phi$, and it retains that dual potentiality whether or not it is actually ϕ. Thus bricks, which are potentially a house, are still potentially a house whether or not they compose an actual house.

In *De Anima* II.5 Aristotle distinguishes levels of potentiality and actuality. A subject x has a first-level potentiality for ϕ, if it is suited to be ϕ but is actually $\sim\phi$. When x is actually ϕ its actuality is first-level. Typically ϕ is itself a capacity for some activity (ϕ-ing). So ϕx is not only at the first level of actuality; it also has a second-level potentiality, which may or may not be exercised. The activity (ϕ-ing) is a second-level

29. There are many versions of this approach, including Woods (1967) (cf. his 1991); Lewis (1991, ch. 11), Loux (1991, ch. 6). Cf. Wedin (2000, ch. 9).

30. The privation is defined with reference to the positive term – e.g., sickness is defined with reference to health (Z.7, 1032b2–6).

31. On this topic, see Gill (1989, ch. 6), Kosman (1969, 1984), Waterlow (1982, ch. 3), and, in this volume, see Bodnár and Pellegrin, ARISTOTLE'S PHYSICS AND COSMOLOGY, esp. pp. 277–81.

actuality. Unlike a change, which leads to a state beyond itself, and so is incomplete, an activity is complete as soon as it starts and for as long as it lasts.

The re-description of matter and form in terms of potentiality and actuality does not overcome the puzzles in Z. Consider a house, which has some claim to be a substance. A builder builds a house out of bricks, stones, and wood. Before he starts, the materials lying in a heap have a first-level potentiality to be a house: they are the right sorts of materials to be a house, but they lack the form of a house. Once the house has been built, the same materials constitute an actual house. The actuality is first-level. Aristotle specifies the form of a house as "a vessel capable of protecting goods and bodies" (H.2, 1043a16–18). This form enables the house to perform its function of actually protecting goods and bodies. This activity is a second-level actuality.

A house is not a genuine unity. The bricks, stones, and wood organized into a house are actually a house, and they have a second-level potentiality to be actively a house. But those materials – the suitable *x* – are not only potentially and actually a house. They are also *actually* bricks, stones, and wood, and they can retain that identity when the house is torn down. Let's call these compositional materials the *remnant matter.*[32] If the materials can remain what they were when the organization is removed, that organization is *accidental* to what they actually are in themselves, namely, bricks, stones, and wood. The being of the house is determined in two ways, by its form and by its matter, as *this in that.*[33] This example reveals that the subject *x* remains a troublemaker, even when Aristotle re-describes the situation in terms of potentiality and actuality.

The relation between matter and form in living organisms differs from that in artifacts, but the difference on which Aristotle focuses in *Metaphysics* Z and H.1–5 merely relocates the problem. On numerous occasions Aristotle insists that the material parts of living organisms, if separated from the whole, are what they were in name only – *homonymously*. For instance, a severed arm is an arm in name only and no better than a sculpted or painted arm. What is true for each bodily part is true for the whole body (*De An.* II.1, 412b17–25). A human corpse is not a human body with the soul removed. It is a human body in name only (*Meteor.* IV.12, 389b31). When an organism dies, what is left is not the organic matter. The matter, as well as the composite, is destroyed when the organism dies. Aristotle's homonymy principle indicates his conviction that the relation between form and matter in living organisms is *not* an accidental relation. On the contrary, the form determines the properties and capacities the matter must have to carry out the various organic functions. Since the form determines the matter, the relation between form and matter in living organisms is *essential.*[34] Let us call the matter, whose identity is determined by the form of the organism, the *functional matter*. Functional matter has certain second-level potentialities in virtue of the form of the object whose matter it is.

32. This vivid label is Wedin's (2000).
33. See Aristotle's three ways of defining a house at H.2, 1043a14–21.
34. The classic discussion of this topic is Ackrill (1972–3). In this volume, see Lennox, ARISTOTLE'S BIOLOGY AND ARISTOTLE'S PHILOSOPHY, pp. 300–10 and Caston, ARISTOTLE'S PSYCHOLOGY, pp. 320–4.

The problem of duality persists, however. Even if the functional matter is determined as what it is by the form of the whole object whose matter it is, the functions belong to some lower level subject, the remnant matter, which survives when the whole is destroyed.[35] In *Metaphysics* Z.10, Aristotle says that Callias is destroyed into flesh and bones (1035a18–19, a33). If flesh and bones survive the destruction of a living organism, they wreck the unity of the whole, even if they are functionally organized into an organic body within the animal. The being of the composite is determined in two ways, by the form (soul) and by the remnant matter (flesh and bones).

In *Generation of Animals* II.1, Aristotle confronts this issue. Flesh, he says, is like a face. After the organism dies, flesh is called flesh only homonymously (734b24–31). Thus he includes the uniform parts, like flesh and bone, with the nonuniform parts, like a face and an arm, as constituents of the functional matter. Still the problem does not go away. What about the matter of flesh – compositional flesh (*GC* I.5, 321b19–32) or the earth and water of which flesh is composed? If hylomorphic analysis uncovers remnant matter, however remote, that is the *x*-factor. The remnant matter undermines the composite on the essence criterion and it undermines substantial form on the subject criterion.

Form–Matter Predication

In the second half of *Metaphysics* H.6 Aristotle sketches what appears to be a new conception of matter and form in terms of potentiality and actuality. His discussion concerns a bronze sphere. Is it a unity? At the end of the chapter he says:

> But, as we have said, the ultimate (*eschatē*) matter and the form are the same and one, the one in potentiality, the other in actuality, so that it is like seeking what is the cause of oneness and of being one; for each thing is some one thing, and the thing in potentiality and the thing in actuality are somehow one, so that the cause is nothing else unless there is something that caused the movement from potentiality to actuality. And all those things that have no matter are simply just some one thing. (1045b17–23)

Why do I think the conception is new? Aristotle is talking about a bronze sphere, not a compound of form and functional matter (on this point, see Loux, 1995). His interest is the unity of the form and what I have so far been calling the remnant matter, the matter that persists when a composite is destroyed. His claim is that somehow the bronze and the spherical shape are one and the same, the one in potentiality, the other in actuality. Whereas on the categorial scheme of predication X and Y were two things, Y predicated of a distinct X, his present claim is that X and Y are somehow one. How can they be? Aristotle elaborates his answer in Θ.7.

In *Metaphysics* Θ.7 Aristotle considers the relation between the compositional matter (e.g., bronze) and the form of the product (the shape of the statue). He argues that the relation differs from that between an ordinary substance and its non-substantial

35. On this topic, see the discussions by S. Cohen (1984, and his more detailed 1996), and Lewis (1994). Rhenius (2006) gives a rigorous critique of Lewis's position.

properties. He speaks of two sorts of predication: categorial predication and form-matter predication.

Aristotle signals his distinction by appeal to ordinary Greek usage. He says that people correctly prefer adjectives to nouns in specifying both an object's non-substantial properties and its matter. We call a man "healthy," not "health," and "musical," not "musicality." Similarly, we call a box "wooden," not "wood," and a statue "brazen," not "bronze."[36] Categorial predication holds as before between a substance and its non-substantial properties. The substance is a definite subject, a *this* (*tode ti*), and a non-substantial property is predicated of it. In such cases, Aristotle says, the ultimate thing is a substance (*ousia*) (1049a29–34). The situation is different for form and matter. He says:

> In the case of things that are not so [i.e., not related as non-substantial properties to a substance], but the thing predicated is some definite form (*eidos ti*) and *this* (*tode ti*), the ultimate thing is matter (*hulē*) and material substance (*ousia hulikē*). And calling [a thing] "that-en" with reference to its matter and its affections turns out to be quite correct. For both are indefinite (*aorista*). (1049a34–b2)

Form–matter predication is not ordinary predication. The item predicated is said to be some definite form and *this* (*tode ti*), and the matter of which it is predicated is variously characterized as *indefinite* (1049b2), *potential* (1049a21, a23), a *universal* (1049a28),[37] and not a *this* (1049a27–29). The indefiniteness of matter differs from the indefiniteness of the bare subject in Z.3. Here Aristotle compares the indefiniteness of matter to that of a thing's non-substantial properties. Non-substantial properties have definite content. Their indefiniteness is rooted in their dependence on a definite object to which they belong. Matter on the new predication model is indefinite in a similar way. We can specify the matter (spell out its content), but like non-substantial properties it depends for its existence on the definite object whose matter it is. This shared indefiniteness explains why people are correct to prefer adjectives to nouns in specifying both an object's properties and matter.

To understand the new form–matter relation, it is helpful to consider Aristotle's account of mixture in *On Generation and Corruption* I.10. He argues that the ingredients of a mixture exist actually before they are combined but are only potentially present in the compound (*GC* I.10, 327b22–31). Think of cake. The ingredients of cake are eggs, flour, sugar, butter, milk, and so on. These exist separately and actually before they are mixed, but once they are combined and the batter is baked, the product is a spongy stuff in which the ingredients are no longer actually present. Aristotle was not an

36. Once before, in Z.7, Aristotle considered this linguistic point (1033a5–23). On that occasion his aim was to give a rationale for the fact that linguistic usage conflicts with the metaphysical facts dictated by the categorial scheme of predication: If bronze is a definite subject of which the shape of a statue is predicated, it should be perfectly correct to call the statue "bronze," just as we call a musical man "man." The fact that Greek usage favors "brazen statue" and "wooden box" was something Aristotle tried to explain away in Z.7.

37. Contrary to modern editors, I read *katholou* ("universal") at 1049a28 with all the manuscripts.

atomist: an analysis of compounds does not yield elemental particles. He says that the ingredients are only *potentially* present in the compound. They are potentially present, because components of that sort are left behind when the compound is destroyed.[38] The original ingredients make a contribution to the compound: some of its properties are due to the ingredients. For example, the original ingredients of cake account for its flavor, moisture, weight, consistency, color, and so forth. The important point is that those properties *characterize* the higher level compound: there is no remnant matter to which the form of that higher compound belongs.

On the new model in Θ.7 the matter is not an independent subject to which the formal properties belong. Instead, the matter is something *potential* and *determinable*, which the form differentiates into a particular object.[39] In place of remnant matter, Aristotle introduces what I call *generic matter* (Gill, 1989, ch. 5). This generic matter can be thought of either as something determinable, which the form differentiates into the object, or as a collection of material properties that characterize the higher level object. An advantage of the new matter–form relation is that a statue is not *two* things with different persistence conditions, but just *one* thing – the statue. The proximate generic matter of the statue is a collection of properties that belong to it.[40] The material properties that connect an object with its simpler origins account for certain aspects of the thing's behavior, but they do not contribute to the nature of the higher level object.

Form and Functional Matter

Aristotle's re-conception of remnant matter as generic matter in H.6 and Θ.7 allows composites of matter and form to be unified objects.[41] That account, though vital to his defense of the substantiality of living organisms, also applies to material stuffs like the metals and artifacts like bronze spheres, which are not genuine Aristotelian substances. To see why living organisms are genuine substances, whereas stuffs and artifacts are not, we must consider Aristotle's further analysis of potentiality and actuality in *Metaphysics* Θ.

Θ.1 opens by reminding us of the main project of ZHΘ. Aristotle is investigating being in the primary sense, the being of substance (1045b27–32). It is in relation to

38. In fact, the components extracted are typically not of the sort used in its production, but elements – earth, water, air, and fire – that composed the original ingredients. Cf. Aristotle's cyclical model of generation and destruction at *Met.* H.5, 1044b29–1045a6.

39. Cf. Brunschwig (1979) and Jaulin (1999). Both scholars treat matter as determinable, like a genus. We differ on the status of the material genus. See Gill (Forthcoming).

40. In Θ.7 Aristotle insists that an object is called "that-en" only with reference to the next item down, not to anything lower. A box is called neither "earthen" nor "earth," but "wooden" (1049a22). This is because the lower level matter is *transformed* into matter at the next level up, contributing some of its properties to it, and so on up the chain. For this reason the product is characterized by the properties of its proximate generic matter alone. See further Gill (Forthcoming).

41. For a different account of the unity of composites, see Scaltsas (1994).

this being that other sorts of beings (qualities, quantities, etc.) are understood. Θ, like the preceding books, investigates substantial being, but it adopts a new approach to that investigation. In Θ.1 Aristotle distinguishes two potentiality–actuality models (1045b32–1046a4).[42] The first model treats potentiality in the strictest sense, which applies to change, but he says it is not the most useful for the present project. Even so, he devotes the first five chapters of Θ to it. In Θ.6 (1048a28–30) he indicates that the first model helps to clarify the second, which he will apply to substance.

The first potentiality–actuality model concerns the transition from a first-level potentiality to a first-level actuality (a change) and the product that results from that change. In Θ Aristotle is primarily interested in the *causal principles* of such changes. He identifies two, one active and one passive.

Change involves a mover and a moved, and each is characterized by a special sort of potency (*dunamis*).[43] Aristotle defines an active potency as "the principle of change in another thing or [in the thing itself] as other" (Θ.1, 1046a10–11). A passive potency is a principle of passive change by another thing or by the thing itself as other (1046a11–26). Active and passive potencies correspond in their goal: a state ϕ to be realized in the patient. But active and passive potency pairs are initially opposed – the agent is ϕ (or has ϕ in mind), and the patient is ~ϕ. By means of the change the agent brings the patient into a state that corresponds to the agent's own active potency (ϕ).[44] The active potency typically belongs to an entity other than the object changed but, in the special case of self-change, as when a doctor cures himself, the active potency belongs to the mover itself considered *as other*. The doctor acts in virtue of his knowledge of health (ϕ); he undergoes a change in virtue of his privation of health (~ϕ). By means of a change the doctor, as the patient, acquires health (ϕ). Aristotle regards an active potency as a first moving cause: it does not itself bring about the outcome, but

42. On this topic, see the classic paper by Kosman (1984). See also Gill (1989, chs. 6 and 7, and 2003).

43. I translate the same Greek word *dunamis* sometimes as "potentiality" and sometimes as "potency." I use "potentiality" in discussing Aristotle's distinctions between *dunamis* and *energeia* / *entelecheia* ("actuality"). I prefer "potency" in discussing an object's principle of active or passive change, because it lends itself more naturally than "potentiality" to active and passive construal. Although I use two translations, I do not intend thereby to distinguish two independent meanings of *dunamis*. Some scholars do think Aristotle has two distinct notions, either causal power and possibility (Charlton (1991), Freeland (1986)), or causal power and potentiality (inactive power) (Witt (2003)). I think there is a single core / focal notion of *dunamis* in Θ, that of active power to change something else (1046a10–11; cf. Δ.12, 1019b35–1020a2). The other sorts of *dunamis* are defined with reference to that. Frede (1994) argues that there is only one notion of potentiality – causal power – in Θ, which Aristotle uses in various ways. Although I agree that there is a generic sameness among the notions (see 1049b5–10, quoted below, p. 367, where Aristotle claims that *nature* is in the same genus as *dunamis*: the genus is presumably simply causal potency), I think there are specific differences among the notions that fall under that kind, and that one of those is the core notion.

44. Bodnár and Pellegrin (this volume) call this the principle of causational synonymy. For the background of this notion, see Mourelatos, THE CONCEPT OF THE UNIVERSAL IN SOME LATER PRE-PLATONIC COSMOLOGISTS, pp. 61–4.

its presence in the agent enables the agent to do so. An active potency is what Aristotle calls an *unmoved* mover.

The second potentiality–actuality model resembles the first in all its basic components. Like the first model, the second employs an active potency and a passive potency; and like the first, the second concerns two main actualities – a motion and a product. But unlike the first, the second model involves an agent and a patient that act and suffer in respect of the *same form* (ϕ), and unlike the first, the second concerns a motion that is not a change, but an activity.

Metaphysics Θ.8 specifies a potency, which Aristotle calls a *nature* and contrasts with the active potency familiar from Θ.1. He says:

> I mean by potency not only the one that has been defined, which is called an active principle of change in another thing or as other, but generally every principle of motion and rest. For *nature* is also in the same genus as potency; for it is a principle of active motion, yet not in another thing but in the thing itself *as itself*. (1049b5–10)

The single modification, that the principle of active motion is in the thing itself *as itself*, yields a scheme quite different from the previous one. In contexts of change the agent acts on a subject deprived of a certain positive character. By means of a change the patient comes to be other than it previously was and is assimilated to the positive state of the agent. On the second potentiality–actuality model the agent and the patient act and suffer in virtue of the same positive character, and in natural cases active and passive potencies are located in the same individual. For instance, a living organism has a perceptive soul, which is an active potency, and its body possesses sense organs, which have a corresponding passive potency. When the organism perceives, perception is a joint operation of its active and passive potencies. Perception does not change the perceiver – the perceiver does not become *other* than it previously was. Perception and the organism's other natural functions are *activities* that express the organism's nature.

The major difference between living organisms and all other material objects is that their active potency, the cause of their characteristic behavior, is internal, not external to them. Whereas an ax depends for its activity on someone who wields the ax, a living organism is both the active source and subject of its activities. Living organisms have an autonomy that other material objects lack.

Primary Substances

The analysis of substantial being in terms of potentiality and actuality reinstates many composites as primary substances. Living organisms like Socrates and the horse Bucephalus are unified objects, despite their composition from matter. Matter does not prevent their unity after all. By treating the lower level (generic) matter as something determinable and not as a definite subject to which properties belong, Aristotle can argue that the matter that connects an object with its simpler origins simply characterizes the object and does not contribute to what it is. He can then argue that the nature of the functional matter is *exhausted* by the form of the organism. There is nothing else of which the functions are predicated which contributes *specially* to what they are.

Predicating the form of the functional matter is therefore not a case of predicating one thing of another (Y in X, where X is distinct in being from Y). The being of a living organism and its essence are, after all, identical. The form of an organism just is the organism's active potency and its matter is its functional body, which is essentially (and exhaustively) determined by the corresponding passive potency. An organism acts on itself as itself and the motion is its characteristic activity, its mode of living.

The residual material properties (with reference to which parts of the organic body are called "*x*-en") remain independent of the form. These properties still have an important role to play. Recall what Aristotle said in H.6: "For each thing is some one thing, and the thing in potentiality and the thing in actuality are *somehow* one" (1045b20–21). Why only "somehow" one? I have argued that the form and the matter of living organisms are characterized by active and passive versions of the same functional properties. But because organisms are generated out of simpler matter and will be destroyed into simpler matter, they also possess dispositional properties of the proximate generic matter. For this reason complex organisms easily degenerate into simpler stuff. The residual material properties tend to subvert the unity of the whole, with the result that the unity is unstable and must be constantly maintained (see Gill, 1989, ch. 7). Those material properties account for the fact that material substances grow tired, weaken, and finally collapse.[45] Because an organism tends to degenerate, staying the same is considerable work. So an organism's characteristic activity is more than an expression of what it is. Such activity is also its means of self-preservation and renewal. This dynamic preservation is the joint manifestation of its active and passive potencies, and that activity maintains the organism as the unified thing that it is.

Theology

I have argued that living organisms are primary substances, whose characteristic behavior is caused by an inner principle, an active potency, which Aristotle calls their nature (*phusis*). These substances are perishable, and the source of their perishability is their proximate generic matter. This matter is not a distinct subject within the object, but a potentiality *of* the higher level object. That potentiality can cease to be actualized. When the potentiality to be the higher object ceases to be actualized, the organism dies – it is reduced to simpler stuff.

Living organisms do not depend on a cause beyond themselves to explain their natural behavior. Their active principle is internal. What does still need explanation, however, are the complex patterns of generation and perishing in the terrestrial realm. This question prompts Aristotle to discuss the heavens and to appeal to an ultimate divine principle, a first unmoved mover.

In *Metaphysics* Λ.5 Aristotle mentions two external moving causes of human beings, the father and the sun in its oblique course (1071a14–17). The sun plays a vital role

45. See Aristotle's discussion of the heavenly bodies in *Met.* Θ.8. Because they do not have the same sort of matter as sublunary objects, they never tire of their proper activity, as do perishable things. Matter of perishable things, which is their potentiality to be and not to be, is the cause of tiring and perishability (1050b20–28).

in substantial generation and destruction. Its twofold motion – its daily westward motion with the sphere of the fixed stars and annual eastward motion along the ecliptic, resulting in longer and shorter days – translates itself down to the sublunary realm in the elemental change witnessed in seasonal variation. The sun's complex motion accounts for the orderly cyclical pattern of generation and destruction in the sublunary realm.[46]

Metaphysics Λ.1 distinguishes three sorts of substances: perceptible perishable substances, like plants and animals; perceptible imperishable substances, like the sun and stars; and unmoved substance, which he argues is separate from physical things (1069a30–b2). Aristotle argues in the following way: What ensures the continuity of generation and destruction in all its splendid variety? His answer: the complex eternal circular motions of the heavenly bodies. What ensures the continuity of those motions? His answer: an unmoved mover, one for each heavenly sphere (Λ.6, 1071b3–11; Λ.8). The Prime Mover is first introduced as the cause of the eternal rotation of the outermost sphere, the sphere of the fixed stars (Λ.7, 1072a23–26; 1072b3–10). But this first mover accounts for more than the continuous rotation of the outermost sphere. In Λ.10 Aristotle asks in what way the good is contained in the universe: Is it contained in something separate by itself or in the order of the parts? Or is it contained in both ways, like an army, whose good is both in the order and the general? Aristotle says that the good is contained in both ways, but it is more the general, since the general does not depend on the order, whereas the order depends on him (1075a11–25). Aristotle's Prime Mover is the principle of cosmic order (see Kahn, 1985). The Prime Mover's constant activity guarantees that things continue to behave according to their natures for the good of one another and for the good of the whole.

Aristotle argues that the Prime Mover is a pure actuality – a second-actuality or activity. He excludes from it all vestiges of potentiality. If the first mover contained any potency (*dunamis*), its activity might fail, and it would depend on something else to ensure the continuity of its activity (Λ.9). The Prime Mover's divine being does not differ in kind from the active being of ordinary terrestrial substances. The difference is that Aristotle's God always enjoys the activity that we earthly substances achieve only sometimes and for a short time (Λ.7).[47]

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46. On the role of the sun in the continuity of generation and destruction and its patterned variety, see *GC* II.10, esp. 336a31–b24. Cf. *Met.* Λ.6, 1072a9–18.

47. I thank István Bodnár and Paul Coppock for valuable comments on this paper. To Heike Sefrin-Weis I owe special thanks (see n. 9 above) for re-orienting my thinking about Aristotle's conception of being in the *Metaphysics*.

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